

APR. 30. 2007 3:17PM

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DOCKET NO. P05718 (NATH15-05718)  
SERIAL NO. 10/688,842  
PATENT

**REMARKS**

Claims 1-20 are pending in the application.

Claims 1, 2, 6-10, 14 and 15 have been rejected.

Claims 3-5, 11-13 and 16-20 have been objected to.

Claims 1, 3, 9, 11, 15 and 16 have been amended as set forth herein.

Claims 1-20 remain pending in this application.

Reconsideration of the claims is respectfully requested.

**I. AMENDMENTS TO THE CLAIMS**

Claims 1, 3, 9, 11, 15 and 16 have been amended as set forth herein. The amendments do not add new matter and are fully supported by the Specification. Accordingly, the Applicants respectfully request that the Amendments be entered.

**II. CLAIM REJECTION UNDER 35 U.S.C. §112**

Claims 1-20 were rejected under 35 U.S.C. §112, first paragraph as claiming subject matter that is not described in the specification in a manner enabling one skilled in the relevant art to make or use the claimed invention. In particular, the Office suggests that the step of "switching mixing input signals with harmonic gating suppression of harmonic responses to the switching mixing" is not supported and is not enabled by the specification. This rejection is respectfully traversed.

Any analysis of whether a particular claim is supported by the disclosure in an application requires a determination of whether that disclosure, when filed, contained sufficient information

DOCKET NO. P05718 (NATH15-05718)  
SERIAL NO. 10/688,842  
PATENT

regarding the subject matter of the claims as to enable one skilled in the pertinent art to make and use the claimed invention. MPEP §2164.01, p. 2100-186 & 187 (8<sup>th</sup> ed., rev. 5, August 2006). The test of enablement is whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent coupled with information known in the art without undue experimentation. *Id.* A patent need not teach, and preferably omits, what is well known in the art. *Id.* The Patent Office has the initial burden of establishing a reasonable basis to question the enablement provided for the claimed invention. *Id.* at §2164.04, p2100-191. The minimal requirement for a proper enablement rejection is to give reasons for the uncertainty of the enablement. *Id.*

The Applicants note that independent Claim 1 requires, for example, "one or more switching devices performing switching mixing input signals with harmonic gating suppression of harmonic responses to the switching mixing." Support for this requirement is included within the Specification.

As a first example, the Specification discloses that in one embodiment, the present disclosure provides a phase alternating mixer implemented by common-base differential transistor pairs, with two cross-coupled pairs providing a switching mixer function with harmonic gating suppression of harmonic responses to the switching mixing by control of local oscillator signals controlling switching of the differential transistor pairs. Specification, paragraph [0004].

As a second example, the Specification includes FIGURE 2 which is a somewhat detailed circuit diagram illustrating a capacitive load mixer with phase alternating mixer functions. *Id.* at paragraph [0019] and FIGURE 2. FIGURE 2 includes, for example, in one embodiment, a low cost

DOCKET NO. P05718 (NATI15-05718)  
SERIAL NO. 10/688,842  
PATENT

bipolar complementary metal-oxide-semiconductor (BiCMOS) direct conversion mixer design based on the requirements identified for a phase alternating mixer with alias and harmonic rejection discussed in the related applications cited in the Specification. Paragraphs [0020], [0021] and [0022] go on to describe the phase alternating mixer 107 and its integrated phase alternating mixing function.

As a third example, the first two transistor pairs, Q2 and Q3 in FIGURE 2, have cross-coupled collectors controlled by local oscillator signals LO1 and LO2, and perform the function of a switching mixer as described in the related application. *Id.* at paragraph [0022].

As a fourth example, the harmonic gating function described in the related application is implemented by switching the first differential transistor pairs Q2 and Q3 in the second stage 202. The Specification goes on to describe the function of the third differential transistor pair Q4.

The related applications include: (1) U.S. Patent Application Serial No. 10/440,026 entitled, "Chopper-Direct Conversion (CDC) Radio Architecture" filed May 16, 2003; (2) U.S. Patent Application Serial No. 10/457,825 entitled, "Harmonic Rejection Gated-Switching Mixer" filed June 9, 2003; and (3) U.S. Patent Application Serial No. 10/464,424 entitled, "Phase-Alternating Mixer with Alias and Harmonic rejection" filed June 18, 2003. All of these references are related to the present Application and were incorporated into the present Application by reference.

Accordingly, from the examples given above and others not specifically referenced above, there is ample support within the Specification for one reasonably skilled in the art to make or use the claimed invention from the disclosure and also coupled with information known in the art

DOCKET NO. P05718 (NATI15-05718)  
SERIAL NO. 10/688,842  
PATENT

without any undue experimentation. The Applicants therefore respectfully request that the Office withdraw the §112 rejection.

### III. CLAIM REJECTION UNDER 35 U.S.C. §102

Claims 1-2, 6-10 and 14-15 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Application Publication No. 2004/0142674 A1 to *Kuiri, et al.*, hereinafter "*Kuiri*". This rejection is respectfully traversed.

A prior art reference anticipates the claimed invention under 35 U.S.C. §102 only if every element of a claimed invention is identically shown in that single reference, arranged as they are in the claims. MPEP § 2131, p. 2100-67 (8<sup>th</sup> ed., rev. 5, August 2006) (*citing In re Bond*, 910 F.2d 831, 832, 15 U.S.P.Q.2d 1566, 1567 (Fed. Cir. 1990)). Anticipation is only shown where each and every limitation of the claimed invention is found in a single prior art reference. *Id.* (*citing Verdegaa Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987)).

*Kuiri* teaches a direct conversion receiver (DCR) having a low noise amplifier for amplifying a received RF signal and for outputting the amplified RF signal to a down-conversion current-switching mixer. Paragraph [0011]. The current-switching mixer processes the RF signal in the current mode and process a local oscillator signal in the voltage mode. Paragraph [0015].

There is, however, no teaching or disclosure within *Kuiri* of mixing input signals with *harmonic gating suppression* of harmonic responses to the switching mixing, as currently required by Claim 1. Moreover, there is no teaching or disclosure within *Kuiri* of at least one of the switching

DOCKET NO. P05718 (NATI15-05718)  
SERIAL NO. 10/688,842  
PATENT

devices switching a first and a second differential transistor pair off for a period between each period during which one of the first and the second differential transistor pairs is switched on, as currently required by Claim 1 and its dependents. Similar arguments exist for independent Claims 9 and 15.

For these reasons, *Kuiri* fails to anticipate the Applicants' invention as recited in Claims 1, 9 and 15 (and their respective dependent claims). Accordingly, the Applicants respectfully request withdrawal of the §102 rejection and full allowance of Claims 1-20.

Accordingly, the Applicants respectfully request the Office withdraw the §102 rejection with respect to these claims.

#### IV. ALLOWABLE SUBJECT MATTER

The Office objected to Claims 3-5, 11-13 and 16-20 as being dependent upon a rejected base claim, but suggested that Claims 3-5, 11-13 and 16-20 would be allowable if rewritten in independent form including all the limitations of the base claim and intervening claims.

Applicants thank the Office for this suggestion but elect not to rewrite Claims 3-5, 11-13 and 16-20 at this time. Accordingly, Claims 3-5, 11-13 and 16-20 should remain in condition for allowance.

APR. 30. 2007 3:18PM

NO. 0315 P. 16

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APR 30 2007

DOCKET NO. P05718 (NATI15-05718)  
SERIAL NO. 10/688,842  
PATENT

**CONCLUSION**

As a result of the foregoing, the Applicants assert that the remaining claims in the Application are in condition for allowance, and respectfully requests that this Application be passed to issue.

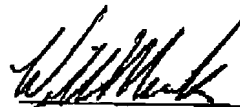
If any issues arise, or if the Examiner has any suggestions for expediting allowance of this Application, the Applicants respectfully invite the Examiner to contact the undersigned at the telephone number indicated below or at [wmunck@munckbutrus.com](mailto:wmunck@munckbutrus.com).

The Commissioner is hereby authorized to charge any additional fees connected with this communication or credit any overpayment to Deposit Account No. 50-0208.

Respectfully submitted,

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